

CLAIMS

1. A cooling system for an internal combustion engine including a pump with an impeller for pumping liquid coolant around a cooling circuit, and a drive shaft, wherein between the impeller and drive shaft there is provided a clutch including first and second clutch members which are moveable into and out of engagement, to connect and disconnect drive from the drive shaft to the impeller respectively, by a temperature sensitive device which includes a chamber in which there is provided a material which over a first, lower, temperature range is in a first state, and over a second, higher, temperature range is in a second state, the material changing in volume when transforming from the first to the second state to urge the first and second clutch members together to transmit drive, and wherein the impeller is constructed such that coolant to be pumped is in thermal communication with the material in the chamber.
2. A cooling system according to claim 1 wherein the material in the chamber of the temperature sensitive device expands when transforming from the first state to the second state.
3. A cooling system according to claim 2 wherein the material is solid when in the first state, and liquid when in the second state.
4. A cooling system according to claim 3 wherein the material is a wax.
5. A cooling system according to any preceding claim wherein the drive shaft has an internal hollow into which coolant to be pumped may pass.

6. A cooling system according to claim 5 wherein the chamber of the temperature sensitive device extends into the internal hollow of the drive shaft.
7. A cooling system according to any preceding claim wherein the system includes a resilient biasing element which acts on at least one of the clutch members to urge the clutch members towards a separated configuration.